

NOTES

MR. J. W. JUDD has been appointed Professor of Geology in the Royal School of Mines in succession to Prof. Ramsay, who resigned some time since. Mr. Judd has been a frequent contributor to our pages and has already taken a very high place in the field of original geological research. His appointment as Prof. Ramsay's successor must give universal satisfaction.

PROF. RAMSAY has been called away to Gibraltar to report on the water-supply there; his place as a lecturer at the British Association will be taken by Prof. Tait.

MR. PORTER POINIER, a most promising young physicist, died in New York on June 11, aged 23 years. In the Polytechnic Institutes of Troy and Hoboken, he had thus early developed a very remarkable genius in the department of applied science. His studies had led him, with great success, into original investigations of heat as a force in nature, and his thorough and accurate and independent researches in this direction had attracted the favourable notice of the faculties under whom he studied. He attained to such important results as were found worthy of public notice, and he was engaged in the preparation and publication of an original work on the Dynamics of Heat, with the approval of his professors. His enthusiasm drank up his spirits, and utterly exhausted his physical force. Before he was aware, he was in the advanced stages of an incurable disease, and while labouring to put his work through the press at Cambridge, he was pronounced beyond recovery. His very rare attainments and his extraordinary promise in the field of research, had been brought to the notice of the Johns Hopkins University at Baltimore, and the day after his death, only too late for his noble ambition, came the certificate from the heads of the university appointing him to a fellowship in that institution. As a lecturer in the department of his special and successful study he had become familiar with the best French and German works in modern science, and his accuracy, and perseverance, and thirst for knowledge, gave him promise of a very eminent future. We believe that there is good ground for hoping that Mr. Poinier's work on thermodynamics may be found to have been sufficiently advanced before his death to be still a valuable contribution to science. A very touching letter from a relative states that "he begged his physicians to keep him alive just to finish his book, and then he would be willing to go."

THE British and the Cambrian Archaeological Associations held their Annual Congresses last week, the former in Cornwall and the latter in South Wales. The members of the former were occupied mainly with visits to the various architectural remains in which Cornwall is so rich, and especially to the localities which are identified with the Arthurian legends. Mr. W. C. Borlase exhibited on Sunday afternoon to a large number of the members, his valuable collection of objects of prehistoric and antiquarian interest. On Monday a visit was paid to St. Just, in the neighbourhood of Land's End, and on the road thither, a number of Cromlechs and an old hill-castle were visited. The meeting, during which a considerable number of antiquarian papers were read, was brought to a close on Tuesday. In the latter, which was opened at Abergavenny, the President was Dr. E. A. Freeman, who gave a valuable address on the importance of Welsh history, referring to the fact that there is no really good history of Wales, and urging upon the Association the advisability of a competent member at once undertaking to supply the want. The members visited several places in the neighbourhood of architectural interest. Both Congresses seem to have been successful.

THERE seems to be some doubt about the Social Science Congress meeting this year in Liverpool, on account of the difficulty in finding a building large enough to contain the many objects which it is intended to exhibit.

THE Statistical Congress opens at Buda-Pesth on Sept. 1. A Congress of Archaeology and Anthropology will also be held at Buda-Pesth in the beginning of September. A proposition will be discussed for making the French language the only one to be used at such international meetings.

THE 25th meeting of the American Association for the Advancement of Science commenced at Buffalo, N.Y., yesterday.

THE University of Upsal, Sweden, will, says the *Revue Scientifique*, celebrate next year, in September, the 400th anniversary of its foundation.

THE Madrid *Official Gazette* states that the Spanish Government has appointed a commission to inquire into the situation and the resources of the Philippine Islands. A botanist will accompany the expedition for the purpose of reporting on the nature of the flora of the interior, the extent of the forests, &c. The Commission will explore carefully the whole group, in order to prepare a map on a large scale. The mountain-chains will be the object of special investigation; the height of all the salient points will be determined with the greatest precision. The officers of the expedition will take notes and make observations for the purpose of preparing a complete monograph of all the islands explored.

THE number of visitors to the Loan Collection of Scientific Apparatus during the week ending August 19 was as follows:—Monday, 2,710; Tuesday, 2,180; Wednesday, 280; Thursday, 270; Friday, 228; Saturday, 3,250; total, 8,918.

MR. T. A. DILLON, writing to Tuesday's *Times* in reference to the proposal to blow up the *Vanguard*, shows that such a course would be quite wanton. He states that he has proved by varied and critical experiments, that by covering the ship tightly with a sheet of canvas a diving-bell would be formed, from which air-pumps could easily expel the water, and the ship would recover her buoyancy and instantly rise and float. Judging from the experiment described by Mr. Dillon, the attempt ought to be made, and that, too, with the greatest hope of success.

A GENERAL Meeting of the Mineralogical Society of Great Britain and Ireland will be held at Glasgow on the afternoon of Wednesday, Sept. 6, after the meeting of the General Committee of the British Association. The exact time and place will be posted up in the British Association Reception Rooms. The chair will be taken by Prof. M. Forster Heddle, M.D., F.R.G.S. All papers intended to be read should be forwarded to Mr. J. H. Collins, at 57, Lemon Street, Truro, Cornwall, not later than Saturday, Sept. 2.

FROM the "Report of the Manchester and Salford Sanitary Association for 1875," we observe that this influential book continues in full activity the good work it has long done in promoting public interests. The pollution of rivers, hospital accommodation, and the control of noxious vapours, are some of the subjects affecting the public health which have occupied the Association during the year. Three of the winter lectures, viz., those on the causes reducing the effects of sanitary reform, on the preservation of health, and on the seeds of disease, have been published at a penny each, and tracts on such subjects as typhoid and scarlet fevers, vaccination, personal cleanliness, clothing, houses, and the feeding, clothing, and nursing of children, have been distributed to a large extent. But what distinguishes this from all other similar societies are the returns of disease in public practice which are published weekly, no other statistics of the kind being published in the kingdom. We earnestly hope that the Association will soon be in a position to discuss the invaluable material they have now accumulated under this head, and publish the results in the form of weekly averages for the different diseases, since the important question of the relation of

weather to health cannot be satisfactorily handled, unless not only the number of deaths, but also the number of attacks, be known.

In the *Hansa* for July 23, at p. 143, appears the first of what promises to be an interesting series of articles by Captain Niejahr on the relation between the formation of clouds and the direction of the wind on the coasts of Northern China and Japan, between 28° and 42°, lat. N., and 121° and 142° long. E.—a region peculiarly suitable for this practical inquiry, inasmuch as it lies between the continent of Asia and the expanse of the Pacific, and its southern portion is besides within the region of the N.E. trade. Attention is more particularly drawn in this article to two distinct kinds of cumulus which suddenly appear in the form of a massive bank of clouds in the western horizon, and are rapidly dissolved as they drift eastward, disappearing before they sink to the eastern horizon, often even before they reach the zenith. These two kinds of cumulus, distinguished as wind-cloud and simple cumulus, differ in their outlines, consistency, and height, in the direction of their motion and the mode of their formation, and there can be no doubt that thorough investigation of them would result in no inconsiderable advantage to navigation. We look forward with much interest for the continuation of this discussion in future numbers of the *Hansa*.

THE Municipal Council of Paris has established a certificate for the pupils of municipal schools; the examinations are proceeding now at Luxembourg. The number of candidates is about 4,000.

IN consequence of the appointment of Mr. L. C. Miall to the Professorship of Biology in the Yorkshire College of Science, the office of Assistant-Secretary to the Leeds Philosophical and Literary Society is now vacant. Mr. R. Reynolds, the Honorary Secretary of the Society, will, we believe, give every information to candidates for the post. Prof. Miall will still continue to act as general curator of the museum.

IN connection with the general introduction of the now celebrated Liberian coffee plants into most of the coffee-producing countries, as noticed by Dr. Hooker in his recently issued report on Kew Gardens, we may draw attention to what our consul says on the decrease of the production of coffee in Cayenne. The kind there cultivated is the Mocha, which at one time was an important staple of the colony, the country being especially adapted for its cultivation. This valuable product of Cayenne, although temporarily abandoned, is not lost to the world; the trees continue to thrive in a wild state, and may be reclaimed hereafter. There are thousands of coffee trees interspersed in the forests of the inhabitable part of the colony which have been abandoned for years. They attain a height of about fifteen or sixteen feet, with a circumference, a few feet from the ground, of thirty inches; they are rich in foliage, but do not bloom. The coffee tree also appears to be safe from the ravages of insects, whereas many other trees suffer vitally from this evil.

THE *Ergebnisse der Beobachtungsstationen an den deutschen Küsten, 1875*, published monthly, have been received. In their researches into the physical peculiarities and fisheries of the North and Baltic Seas, the Ministerial Commission at Kiel continue to carry out with vigour and ability the comprehensive system of observation established by them a few years ago, under which the physical data necessary for the solution of many questions affecting the fisheries of these seas are being gradually accumulated. These include physical observations at nineteen stations on the daily height of the water of the seas, their temperature, specific gravity, and currents, and the amount of cloud and direction and force of the wind; very full meteorological observations at four stations; and the details of the daily fish-

ings in each of the seven districts of the coasts. It might be suggested whether observations of daily maxima and minima of the temperature of the sea by thermometers continuously immersed, as suggested by Mr. Stevenson, and carried out by the Scottish Meteorological Society in similar inquiries, might not, from their great practical value, be added to their physical observations by the Commission at Kiel.

AN account of the geology, physical geography, and botany of the West Riding of Yorkshire, is now in course of preparation, and will shortly be published by subscription. The geological portion of the work will be undertaken by Mr. J. W. Davis, F.G.S.; Mr. F. Arnold Lees, F.L.S., will be responsible for the botany, while the division of physical geography will be a joint production of the two authors. In this last section, with the description of each locality, the flora of each area will be given. We believe Mr. J. W. Davis, of Greetland, Halifax, will furnish particulars and receive subscriptions.

THE Mayor of Marseilles and the Prefect of Bouches du Rhone have signed a contract obliging the city to pay a yearly subvention of 15,000 francs to the Observatory, and to continue *in perpetuo* the free grant of lands and buildings in the present site occupied by it. M. Waddington will ask the Budget Commission for an enlarged credit.

WE are glad to notice the advent of a new Norwegian journal of science published at Christiania, and entitled *Archiv for Matematik og Naturvidenskab*, the editor being M. Albert Cammermeyer. The following are some of the articles contained in the first two numbers:—"On the Ancient Norwegian Coasts," by M. Sexe; "On the Fjords and Glaciers of Northern Greenland," by Amund Helland, who visited this country during the months of June, July, and August, 1875; a review by Worm Müller, of Malassez's "La Numération des Globules Rouges du Sang." Besides these there are other papers on Geology and Meteorology. We wish every success to this new periodical.

THE proposal to submerge a portion of North Africa by means of a canal from the Gulf of Gabes, letting the water of the Mediterranean westwards over the lake region of Djerid, seems from the facts detailed by MM. Roudaire and Dupuis to be not only a practicable, but also likely to turn out a remunerative undertaking. Owing to the comparatively small area it is proposed to submerge, the meteorological changes which the submersion would occasion can only be slight, strictly local, and altogether beneficial in their general tendency—differing absolutely in all these respects from the meteorological changes which would result from the submersion of the western portion of the Sahara, proposed some time ago. From this latter project it would follow, owing to the great extent of the water surface which would thus overspread the Western Sahara, and its proximity to the Atlantic, that the present disposition of the lines of atmospheric pressure would be seriously altered, a result necessarily attended with changes in the prevailing winds and currents of the North Atlantic, seriously affecting international interests in a manner which our present knowledge does not enable us in any way accurately to predict. But such an objection does not apply, as already stated, to the project of submerging the region of Djerid.

THE law for the International French Exhibition for 1878 has been voted by the Senate. M. Krantz, the director, an engineer, has established his offices at the Palais de l'Industrie, and sixteen pupils of the School of Beaux Arts are executing building plans under his direction. The work of construction in the Champ de Mars is expected to begin almost immediately.

ON July 26 the shock of an earthquake was felt at Grenada, the direction of the oscillations being north to south. As the

duration was only a few seconds no real damage has been recorded.

AN interesting series of papers is commenced in the August part of the *Geographical Magazine*, giving Sketches of Life in Greenland, by a lady who was born and passed several years of her life in the country. The papers are likely to show life in Greenland in somewhat new aspects. In the same number is a long and valuable letter from Dr. Beccari on New Guinea, dealing chiefly with its ethnology; he holds firmly to the opinion that the Papuans are a mixed people. Mr. H. P. Malet contributes a paper on the Sea-Level, and Mr. Ravenstein continues his paper on the Census of the British Isles.

IN the last issued number (May) of the *Bulletin* of the French Geographical Society, is a long and valuable Report on the Progress of the Geographical Sciences during the year 1875, by M. Ch. Maunoir. In the same number is the conclusion of M. De Sainte-Maire's Itinerary in Herzegovina, and the address of the President, Baron De La Roncière Le Noury, at the last general meeting of the society.

THE "concours general," or competition between the pupils of the several colleges of Paris, is an old institution established by the University of Paris about thirty years before the French revolution. In 1730 a Parisian *bourgeois*, called Legendre, bequeathed to the University a large sum of money under that condition. The University was put in possession only after a long law-suit instituted by the heirs, who urged insanity, but at last were defeated. A number of celebrated *littératrices* have been successful candidates. This year the *prix d'honneur* was taken by young Remach, who for the first time since the "concours general" was established, took all the other prizes of his class. The success of the "concours general" for the colleges of Paris was so large that M. Duruy established in the last years of the Empire a competition for all provincial colleges, Paris and Versailles excepted. This year the most successful college was Grenoble, which took eight nominations. Lyons took only seven.

SOME interesting particulars of the great rains which occurred in the north-east of Switzerland in the middle of June last are communicated by M. F. Zurcher to the *Bulletin Hebdomadaire* of the Scientific Association of France. From 8 p.m. of the 13th to the morning of the 14th the enormous quantity of 12·4 inches of rain fell at Zurich—a quantity greater than any monthly fall since the observations began in the end of 1863, the largest monthly rainfall having been 11·3 inches during March, 1876. Owing to so unprecedentedly large a rainfall and the melting of the snows which occurred at the same time, Lake Constance rose nearly 10 feet above its usual level. It may also be noted that heavy rains have prevailed since the beginning of February, so much so that on the morning of June 14, the amount collected, reckoned from the beginning of the year, was 45·67 inches, being nearly 2 inches above the annual average rainfall of Zurich. Whence came the aqueous vapour which was discharged from the clouds in such deluges of rain on the night of June 13-14?

IN the same number of the *Bulletin Hebdomadaire* it is stated that Dr. Grzygmaia, of Podolia, in East Russia, where hydrophobia is very prevalent, has successively treated, without a single failure, more than a hundred cases of hydrophobia with the leaves of *Xanthium spinosum*. It is necessary that the remedy be applied shortly after the person has been bitten and before the symptoms of hydrophobia become manifest—the treatment consisting of 9½ grains of the leaves of *Xanthium* in the form of a powder, thrice a day for three weeks. For animals the treatment is the same except that the dose is larger.

THE additions to the Zoological Society's Gardens during the past week include a Spotted Eagle (*Aquila naevia*), European, presented by Mr. W. Prodham; two Common Barn Owls (*Strix*

flammea), European, presented by Miss M. A. Hicks; a Yellow-bellied Liothrix (*Liothrix lutea*) from India, presented by Mr. W. Prehn; a Common Cuckoo (*Cuculus canorus*), European, presented by Mr. J. Paddy; an Egyptian Vulture (*Neophron percnopterus*) from North Africa, deposited; two White-crested Laughing Thrushes (*Garrulax leucolophus*) from the Himalayas, a Sun Bittern (*Eurypyga helias*) from South America; a Hawk's-billed Turtle (*Chelone imbricata*) from the West Indies, purchased.

SCIENTIFIC SERIALS

American Journal of Science and Arts, July.—Prof. Loomis here gives some interesting results obtained from observations of the United States Signal Service. Whenever an area of low barometer is formed in the United States, there seems to be always an area of high barometer about 1,200 miles to the south-east. The same thing was found to hold for the Atlantic Ocean and Europe, the average distance between the areas being here 1,700 miles, and the direction rather more southerly. Areas of high pressure are probably formed from air that is expelled from those of low. Low barometer is generally associated with high temperature, so we might conclude that a temperature above the mean in Iceland would be accompanied by one below the mean in Central Europe; this was verified. An unusually high barometer in Central North America may be the result of storms 1,500 or 2,000 miles to the north-west. Prof. Loomis found the average forms of the isobars about an area of maximum pressure, an oval with major axis nearly double the minor. The forms about minima were nearly the same; as were also the directions of the major axes in both cases (N.E.). The rainfall is least when the pressure at the centre of a storm is increasing (or the storm diminishing in intensity), greatest in the opposite case. The stationariness for several days of storms near Nova Scotia or Newfoundland, seems due to unusual rainfall there. Prof. Loomis lastly furnishes data as to the course and velocity of storms in tropical regions.—Prof. Farlow has studied a disease which caused much loss of olive and orange crops in California last summer. He says that though first attracting the eye by the presence of a black fungus, the disease is not caused by it, but rather by the attack of some insect, which deposits some gummy substance on the leaves and bark, or so wounds the tree as to cause some sticky exudation on which the fungus especially thrives. The fungus greatly aggravates the trouble, but in seeking a remedy, it is necessary to look further back.—Mr. Gilbert gives a description of the Colorado Plateau Province as a field for geological study; it offers valuable matter in an advantageous manner.—Drs. Blake and Gent describe a vanadium mica found on the western slope of the Sierra Nevada, and to which the name of Roscoelite is given, in honour of Prof. Roscoe. It contains quite a large per-cent-age of vanadium (20·16), which is present as V_6O_{11} . This mica is found in the hanging wall of a small quartz vein, the country rock being porphyry; fine scales of gold occur between the crystals.—We may further mention a series of notices of recent American earthquakes (1874-76), by Prof. Rockwood.—Mr. Grinnell describes, in the Appendix, a Crinoid from the Cretaceous formation of the West.

Poggendorff's Annalen der Physik und Chemie, No. 5, 1876.—In this number we have the first portions of two valuable papers on electrical subjects—one by M. Root on dielectric polarisation, the other by M. Wiedemann, on the laws of passage of electricity through gases. We shall return to these.—M. Edlund passes under review some researches on what he had termed *galvanic expansion*; confirming and extending the observations of Streintz in reply to objections urged by Wiedemann against the results from which M. Edlund inferred that there was such expansion (distinguishable from that by heat). From the fact that it disappears pretty much according to the same laws as heat, the author and M. Streintz supposed that it was caused by molecular oscillations which are gradually communicated to the surrounding medium; and anything furthering this communication must so diminish said expansion. Now, M. Exner lately experimented by keeping the wire through which the current was sent, in cold water; and the result was an entire disappearance of galvanic expansion, as might have been expected, but the phenomenon was not thereby proved (as M. Exner thought) to have no existence.—In